ENVIRONMENTAL EDUCATION FUNDING WINDOW

ARIZONA GAME AND FISH DEPARTMENT
ENVIRONMENTAL EDUCATION
EE Grant Proposal's – GOALS & OBJECTIVES

June 2011

ENVIRONMENTAL EDUCATION as defined in A.R.S. § 17-296, means educational programs dealing with basic ecological principles and the effects of natural and man related processes on natural and urban systems and programs to enhance public awareness of the importance of safeguarding natural resources.

Our intent is to fund projects that will give the greatest return for the Heritage funds invested consistent with the stated funding goals and objectives. In 2012 there is a total of **$32,000** available to support **ENVIRONMENTAL EDUCATION grant proposals** submitted.

ENVIRONMENTAL EDUCATION projects for which EE grant proposals are submitted must be consistent with one or more of the **Goals & Objectives** listed below in order to be fully considered.

GOAL 1: Field Trips/Outdoor Experiences

a. The development and implementation of field trips focused on quality outdoor education and/or recreation. Priority will be given to projects:
   1) Utilizing properties or facilities owned or operated by the Department
   2) Reaching underserved or non-traditional Department audiences

b. The development and implementation of school or neighborhood-based outdoor education programs emphasizing awareness, appreciation and stewardship of wildlife and its habitats.

GOAL 2: Professional Development

a. The development and/or implementation of a continual, sustained professional development program that focuses on integrating wildlife education across academic disciplines and/or grade levels within a school site.

GOAL 3: Curriculum Development

a. The development of standards-based lessons that integrate wildlife concepts across multiple academic disciplines, with an emphasis on math, social studies, and language arts.

b. The development of inquiry-based instructional activities that promote the use of current scientific research and data involving Arizona habitats and wildlife.

c. The development of activities that integrate current technological developments (e.g., GIS/GPS, smart phones, etc.) into wildlife-focused science instruction.

GOAL 4: Resource Development

a. The development of educational resources designed specifically to promote awareness, appreciation, and stewardship of Arizona's wildlife and its habitats.

GOAL 5: Community Outreach

a. The development of wildlife-based science fairs, or the integration of wildlife-based themes within new or existing school, district, regional, and/or state science fairs.

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SCHOOLYARD HABITAT FUNDING WINDOW

ARIZONA GAME AND FISH DEPARTMENT
SCHOOLYARD HABITAT
SCHOOLYARD Grant Proposal's – GOALS & OBJECTIVES

June 2011

SCHOOLYARD HABITAT refers to grants for projects that encourage wildlife education on school sites through the development or enhancement of urban wildlife habitats. Project proposals should request a minimum of $1,000 and a maximum of $10,000. Grants are limited to schools/facilities within the public school system to include charter schools. Projects should encourage wildlife education, development or enhancement of urban wildlife habitats, and involve students from planning to implementation.

Our intent is to fund projects that will give the greatest return for the Heritage funds invested consistent with the stated funding goals and objectives. There is a total of **$37,500** available to support **SCHOOLYARD HABITAT grant proposals** submitted this grant cycle.

SCHOOLYARD HABITAT Project proposals submitted must be consistent with one of more of the **Goals & Objectives** listed below in order to be fully considered:

GOAL 1: New Schoolyard Site Development

a. The development and implementation of urban wildlife habitat on school sites or adjacent areas, which encourages use by urban wildlife species; emphasizing awareness, appreciation, and education about wildlife and habitats.

b. Promote wildlife and habitat education through project design
   1) Utilize native plants, reclaimed water, recycled materials
   2) Utilize and design space for an outdoor classroom
   3) New curriculum development or enhancement
   4) Encourage and emphasize outdoor activities/time for students

c. Student involvement on project
   1) Planning
   2) Development
   3) Implementation

GOAL 2: Project Enhancement and Restoration

a. Add improvements to existing schoolyard habitat sites
   1) Benches/tables/workstations
   2) Viewing blinds
   3) Feeders
   4) Nest boxes

b. The development of updated curriculum, signage, or supplemental education materials/resources
    1) Create a new program.
    2) Develop a plan for school/classrooms to continue to utilize site into future years

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URBAN FUNDING WINDOW

ARIZONA GAME AND FISH DEPARTMENT
URBAN WILDLIFE / URBAN HABITAT
URBAN Grant Proposal's – GOALS & OBJECTIVES

June 2011

URBAN WILDLIFE/URBAN HABITAT refers to Heritage Fund monies used for conserving, enhancing and establishing wildlife and wildlife habitat within, or in close proximity to, urban areas. Per Arizona Revised Statute "Urban Wildlife" is designated as wildlife that occurs within the limits of an incorporated area or in close proximity to an urban area that receives significant impact from human use. (A.R.S. 17-296(6)).

Our intent is to fund projects that will give the greatest return for the Heritage funds invested consistent with the stated funding goals and objectives. In 2012 there is a total of **$112,500** available to support **URBAN grant proposals** submitted.

Urban Wildlife and Urban Habitat projects for which URBAN grant proposals are submitted must be consistent with one or more of the **Goals & Objectives** listed below in order to be fully considered.

GOAL 1: Human/Wildlife Conflicts

a. Educational projects or programs that assess and develop proactive measures to reduce the risk of critical incidents and other human/wildlife conflicts in urban areas; including land management practices and public awareness programs with emphasis on an integrated community approach. (site G& O)

GOAL 2: Wildlife Viewing

a. Support wildlife-focused festivals including planning, promotion and *implementation.*

b. Projects to develop and implement wildlife-viewing programs and activities in urban areas and at urban-eligible AGFD wildlife areas including site development (e.g. viewing blinds, interpretive signage, trail and facility development, etc.).

c. Projects supporting nature tourism marketing including partnering opportunities with related agencies, businesses and communities to develop wildlife viewing conferences, communication plans or enhancements.

d. Research related to wildlife-viewing recreation (nature tourism) that attempts to understand the wildlife-viewing market in Arizona including, but not limited to: expectations for satisfying experiences, importance of specific wildlife species of interest, willingness to pay for valued wildlife-viewing experiences, economic impact on local communities, etc.

GOAL 3: Wildlife Corridors/Habitat Conservation

a. Projects or programs supporting and/or promoting smart growth efforts that incorporate wildlife habitat conservation to guide the preservation, development, or redevelopment of a neighborhood, community, or region.

b. Community partnership projects that focus on land use planning to maintain wildlife habitat connectivity in urban settings.

c. Research or development of projects (such as fencing, culverts, land bridges, signage, etc.) for allowing wildlife to cross urban barriers such as roads and canals. Projects should include monitoring and research, or result in guidelines to make barriers more permeable to wildlife.

d. Research or monitoring (baseline and/or post-development) the impacts of new or proposed development in urban areas, including, but not limited to, movement or corridor use studies using GPS collars in urban areas.

GOAL 4: Urban Fishing Program

a. Fishing clinics and other urban lake activities including fish habitat and angler enhancements.

NOTE: To be eligible for Urban funding the project must be within the corporate limits of an incorporated city or town, or within 5 miles (straight-line distance) of the boundary.

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PUBLIC ACCESS FUNDING WINDOW

ARIZONA GAME AND FISH DEPARTMENT
PUBLIC ACCESS
Public Access Grant Proposals – GOALS & OBJECTIVES

June 2011

PUBLIC ACCESS as defined in A.R.S. § 17-296, means to provide entry to publicly held lands for recreational use where such entry is consistent with the provisions establishing those lands. Publicly held lands are those federal, public and reserved lands, State Trust Lands, and other lands within the state of Arizona, owned, controlled or managed by the United States, the State of Arizona, agencies or political subdivisions thereof.

Our intent is to fund projects that will give the greatest return for the Heritage funds invested consistent with the stated funding goals and objectives. In 2012 there is a total of **$50,000** available to support **PUBLIC ACCESS grant proposals** submitted.

PUBLIC ACCESS projects for which PUBLIC ACCESS grant proposals are submitted must be consistent with one or more of the **Goals & Objectives** listed below in order to be fully considered.

GOAL 1: New or enhanced wildlife-oriented recreational access (motorized or non-motorized) onto public or State Trust lands previously inaccessible to the public.

GOAL 2: Obtaining perpetual or other long-term rights-of-way to secure public access for wildlife oriented recreation where it may be jeopardized by potential land development or other land status changes.

GOAL 3: Public works projects providing new or enhanced recreational access opportunities on or to public lands for persons with disabilities.

GOAL 4: Public works projects providing new or enhanced recreational access opportunities on or to public lands through improved design and construction methods.

GOAL 5: Education and information outreach pertaining to public access in Arizona, including ethical and responsible use of private and public lands, and opportunities for volunteerism.

GOAL 6: Realignments of existing access routes to protect sensitive habitat areas.

NOTE: Research projects are not applicable for this funding source. Where appropriate and feasible, projects should be designed and constructed to accommodate persons with disabilities.

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IIAPM FUNDING WINDOW

ARIZONA GAME AND FISH DEPARTMENT
IIAPM
IIAPM Grant Proposal's – GOALS & OBJECTIVES

June 2011

Heritage IIAPM grants are for projects that preserve and enhance Arizona's natural biological diversity. The sensitive elements (e.g. species and habitats) for which Identification, Inventory, Acquisition, Protection, and Management (IIAPM) grant proposals may be submitted are listed in this document. Projects must align with at least one of these objectives to be considered for grant funding.

Our intent is to fund projects that will give the greatest return for the Heritage funds invested. In 2012 there is a total of **$200,000** available to support IIAPM grant proposals submitted.

IIAPM projects for which IIAPM grant proposals are submitted must be consistent with one or more of the **Goals & Objectives** listed below in order to be fully considered. Any proposal not in full compliance with the following guidance will be rejected:

> Proposals will only be accepted for the element-specific objectives listed on the following pages.
>
> Proposals must address at least one of the listed elements and one or more of the listed Grant Proposal Objectives for that element.
>
> The element(s) and objective(s) in which a proposal is focused and the project deliverables must be clearly identified in the proposal.

Proposals are often more competitive (in terms of funding consideration) when they address more than one listed sensitive element, and when they provide comparable information for other (non-listed) wildlife and/or habitats in the project area and when they can be tied to actions or stressors identified in Arizona's State Wildlife Action Plan (SWAP), previously known as the Comprehensive Wildlife Conservation Strategy (CWCS).

Please contact the Department's IIAPM Wildlife Management Project Leader or Assistant Project Leaders (623-236-7500) regarding any questions about elements or objectives eligible this year.

Note: The list of Species of Greatest Conservation Need that are referenced in this document are available from the Department's Nongame Branch (5000 W Carefree Highway, Phoenix, Arizona 85086; phone 623-236-7507; fax 623-236-7926) or by download from the Department's website (http://www.azgfd.gov/w_c/cwcs.shtml).

Wildlife Elements	**Grant Proposal Objectives**
Mammals	
Bats: Miscellaneous	A. Projects that investigate the presence/absence of White nose syndrome in Arizona bat populations. B. Projects that investigate bat migration corridors in Arizona. C. Projects that investigate methods and develop effective means for assessing population estimates and status of Arizona bat species.
Pronghorn (all subspecies)	A. Public information activities, materials, and/or plans on open space planning and its benefits to pronghorn in suburban/rural development areas, statewide. B. (1) Research and development of criteria for habitat enhancement in grasslands ecosystems, with particular emphasis on grasslands restoration in juniper invasion areas and development of measurement parameter guidelines and locally valid prescriptions for pronghorn habitat management. (2) Research on pronghorn habitat on the Anderson Mesa. (3) Determine the quantity and quality of herbaceous ground cover needed to help increase fawn recruitment in Colorado Plateau grassland habitats in northern Arizona. (4) Identify through modeling and then ground truth, existing and historic pronghorn movement corridors in central and southeastern Arizona.
Gunnison's Prairie Dog	A. Determine the effects of disease, effects of grazing, effects on survival of relocation efforts, effects of habitat fragmentation. B. Conduct genetic analysis to determine population structure and degree of variability to compare to other states' populations.
Black-tailed Prairie Dog	A. Monitor the effects of black-tailed prairie dog reintroduction on the grassland ecosystem. Specifically, monitor plant composition and structure and animal diversity and abundance. B. Implementation of the *Interagency Management Plan for Black-tailed Prairie Dogs in Arizona*, specifically implementing research needs such as genetic analysis of Arizona black-tailed prairie dogs in museum collections and evaluation of the relatedness of populations in Texas (east of the Pecos River), New Mexico and Mexico. C. Assist Mexican partners in the evaluation of the Las Palmitas black-tailed prairie dog population as a potential source for future re-establishment efforts in Arizona.
Tree Squirrels	A. Conduct studies focusing on the impact of Abert's on tree squirrels (AZ grey and Mexican fox squirrels) and possible habitat segregations that may be occurring in the

	sky islands. B. Continue to look at impacts of Abert's on MGRS. C. Look at the genetics of AZ grey squirrels. D. Surveys for Abert's and Arizona gray squirrels in the Catalinas and perhaps the Rincons.
Meadow Jumping Mouse	A. Conduct surveys in appropriate habitat near the Verde River. B. Initiate long-term monitoring of populations in the White Mountains
Water Shrew	A. Determine genetic relationship of Arizona population to populations throughout the southwest.
Mammals: Miscellaneous	A. Through field surveys and literature review, identify distribution, habitat requirements, and current population status of any nongame mammal species found in the SWAP Species of Greatest Conservation Need (Tier 1a and Tier 1b). B. Implementation of the small mammal conservation plan.
Ocelot	A. Conduct genetic and morphological analysis of museum specimens and verifiable records and evaluate relatedness of populations in Arizona and northern Mexico (specifically west of the Sierra Madre Occidental).

Wildlife Elements	**Grant Proposal Objectives**
<u>Birds</u>	
Birds: Various Grassland Assemblages	A. Field surveys for grassland bird species of concern as identified in the State Wildlife Action Plan.
Arizona Partners in Flight Plan	A. Projects that implement priorities identified in the AZ Partners in Flight Plan, available at http://www.azgfd.gov/.
Riparian Raptors (Mississippi kite, Gray hawk and Common Black-hawk) Zone-tailed hawk	A. Gather current status, population estimates, and demography information.

AZGFD Heritage – IIAPM
Re: Sensitive Elements for Grant Proposals Submitted in 2011

Wildlife Elements	Grant Proposal Objectives
Reptiles	
Sonoran Desert Tortoise	A. Using AGFD-approved protocols, conduct population sampling using occupancy methods at one or more AGFD-selected permanent study areas. B. Investigate effects of invasive exotic plant species and catastrophic wildfires on population biology. C. Conduct field studies (including radio-telemetry and other mark-recapture techniques) to investigate ecology of hatchlings and early juvenile size classes.
Box Turtle	A. Develop and field test box turtle distribution model based on field surveys (including occupancy and capture-recapture) and landscape variables (specifically woody shrubs, riparian areas, and fire)
Sonora Mud Turtle	A. Conduct field studies (including radio-telemetry and other mark-recapture techniques) to investigate effects of invasive exotic species on the ecology of hatchling and early juvenile size classes.
Horned Lizard, Flat-tailed	A. Determine effects of roads, off-road driving, predation, and non-native plants, on abundance, dispersal, and habitat. Use results to provide management recommendations to eliminate or mitigate negative impacts. B. Determine the following life history and demographic parameters and how they vary with environmental conditions: mortality, longevity, clutch size, clutches per year, hatching success, recruitment, diet, and home range size. C. Determine the feasibility of using genetic analysis to distinguish between the scat of flat-tailed horned lizards and Sonoran horned lizards.
Northern Mexican Garter snake	A. Design and conduct radio telemetry study to investigate habitat use and selection, movement patterns, and hibernation sites. B. Conduct population monitoring through intensive mark/recapture along the upper Santa Cruz River.
Narrow-headed and Northern Mexican Garter snakes	A. Design and implement experiments to test effectiveness of translocations or reintroductions. B. Design and implement experiments to evaluate the effects of conservation and wildlife management tools on garter snakes. C. Evaluate husbandry techniques to assist with captive rearing.

Wildlife Elements	Grant Proposal Objectives

Amphibians	
Salamander, Sonora Tiger	A. Conduct field studies (including radiotelemetry and other mark-release-recapture techniques) to investigate demographic and dispersal information. B. At the local level, investigate effects of life history variation (i.e., maturation as branchiate or metamorphosed animals) on demography and on disease maintenance and spread. C. Investigate effects of habitat enhancement (e.g., vegetation enhancement, fencing, improved water supplies, etc.) on Sonora tiger salamander survivorship and demography.
Frogs, Ranid (native)	A. Design and/or implement habitat enhancements to increase habitat suitability, including removal of exotic predators, increasing permanency of aquatic habitats, and protecting important habitats from recreational pressures and other land management practices at historical and/or current sites of occurrence. B. Design and implement research to address specific objectives outlined in recovery plans, conservation and reestablishment proposals. C. Investigate mechanisms by which disease (chytridiomycosis, rana viruses) contributes to species decline.

Wildlife Elements	**Grant Proposal Objectives**
Fish	
Pupfish, Desert	A. Design and/or implement habitat enhancement and restoration activities at extant sites or at sites approved by AGFD for reestablishment. B. Investigate interactions and effects of fathead minnow and/or mosquitofish on pupfish population dynamics.
Gila chub	A. Develop a Safe Harbor Agreement (SHA) for non-federal landowners to provide new habitat for refuge populations of this species
Topminnow, Sonoran (includes Gila and Yaqui subspecies), Spikedace, and Loach minnow	A. Design and/or implement habitat enhancement and restoration activities at AGFD-approved sites. B. Develop a SHA for state and county vector control agencies to use AGFD-supplied mixed-lineage Gila topminnow for stocking urban sites and backyard ponds
Yaqui Basin Fishes and Sonora Chub	A. Design and/or implement habitat enhancement and restoration activities at extant sites or at sites approved by AGFD for reestablishment.
Little Colorado Spinedace	A. Design and/or implement habitat enhancement and restoration activities at extant sites or at sites approved by AGFD for reestablishment.
Chub, Roundtail/Hea	A. Conduct studies evaluating current ongoing surveys and their abilities to accurately represent population status and trends.

dwater; Sucker, Flannelmouth/ Little Colorado River; Sucker, Bluehead/Zuni	B. Investigate known information on conservation genetics and assess the need for additional genetic characterization. C. Design and/or implement habitat enhancements and restoration activities at extant sites or at sites approved by AGFD for reestablishment pursuant to the Three Species Rangewide Conservation Agreement and the State Conservation Agreement and Strategy for Six Native Fish Species. D. Develop a Candidate Conservation Agreement with Assurances for non-federal landowners to provide new habitat for refuge populations of roundtail or headwater chub.

Wildlife Elements	**Grant Proposal Objectives**
Crustaceans and Mollusks	
Miscellaneous	A. Field surveys and literature search to determine historical and present occurrence, population status and trends, and management needs of one or more SWAP Tier 1a or 1b species. B. Research on how one or more of the following elements respond to specific land management practices, and on their population genetics, taxonomic validity, and habitat requirements: SWAP Tier 1a or 1b species. C. Genetic and morphological analysis to resolve taxonomic uncertainties of SWAP Tier 1a and 1b species Mollusk/crustacean habitat enhancement, including: vegetation restoration, renovation/repairing springheads, fencing sites, improving water quality, creation of new sites and long-term protection of sites by other means.
Crayfish	A. Investigate effects of crayfish and crayfish removal on lotic or lentic aquatic communities (invertebrates, fishes, amphibians, reptiles, etc.). B. Research, develop, and field-test methods to effectively eradicate, suppress or restrict movements of crayfish. C. Research habitat selection criteria and maximum range movements to determine what, if any, buffer distances from at-risk native fish, reptile, and amphibian populations are effective.
San Bernardino Springsnail, Three Forks Springsnail, and Huachuca Springsnail	A. Design and/or implement habitat enhancement and restoration activities at extant sites or at sites approved by AGFD for reestablishment. B. For Three Forks Springsnail, extent and distribution surveys at springs in the vicinity of Three Forks and Boneyard Bog that are currently or historically were connected by water. C. Develop captive propagation techniques and protocols to aid in the establishment of Three Forks or San Bernardino Springsnail refugia.

Other	**Grant Proposal Objectives**
Significant Caves	A. Develop site-specific management plans for caves with significant crustacean, mollusk, bat, and/or other wildlife values. B. Implement habitat enhancement, renovation, and restoration activities for caves with significant crustacean, mollusk, bat, and/or other wildlife values. Examples: gating to control access; reinforcing weathering zones.
Beaver	A. Reestablishment of riparian habitats using biological mechanisms. B. Evaluate effectiveness of beaver reestablishment on the San Pedro River, including comparison of vegetative changes.
Smart Growth	A. Project or program supporting and /or promoting smart growth efforts that incorporate wildlife habitat conservation. Project species must be at least one of the Wildlife Elements listed above.

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[1]The parenthetical numbers below are references to: Brown, D.E., C.H. Lowe, and C.P. Pase. 1980. A digitized classification system for the biotic communities of North America, with community (series) and association examples for the Southwest. Journal of the Arizona-Nevada Academy of Science 14 (Suppl. 1):1-16.